PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appln. No.	:	10/821,828
Applicant	:	Hector F. DeLuca et al
Filed	:	April 9, 2004
Title	:	2-Alkylidene-18,19-Dinor-Vitamin D Compounds
TC/A.U.	:	1612
Examiner	:	Badio, Barbara P.
Docket No.	:	1256-00949
Conf. No.	:	1399

CERTIFICATE OF ELECTRONIC SUBMISSION

I hereby certify that this correspondence is being submitted electronically with the United States Patent and Trademark Office's electronic filing system (EFS Web) on this 15th day of December, 2009.

Melissa Guzman 12/15/09

Melissa Guzman Date

DECLARATION OF HECTOR F. DELUCA

Commissioner of Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

I, Hector F. DeLuca, hereby declare as follows:

1. That I am one of the named inventors in the above-identified patent application.

2. That I am a Professor of Biochemistry in the College of Agricultural and Life Sciences at the University of Wisconsin-Madison, located in Madison, Wisconsin, and have been active in conducting research in the vitamin D field for more than 35 years.

3. That I have read and I am familiar with the Patent Office Action dated July 1, 2009 and have knowledge of the references cited therein and applied against the claims of the present application.

4. That based upon my experience in the vitamin D art and, particularly, because of my knowledge of the compounds of the present invention and those of the applied art, and the unexpected activity which the present compounds exhibit, I disagree with the Examiner that the compounds per se and the use of the compounds of the present invention for the treatments claimed would be obvious from the references applied, and that my position is fully supported by the following facts set forth herein.

5. First, I disagree with the following statement made by the Examiner in the Office Action of July 1, 2009:

"The skilled artisan in the art would know that two laboratories utilizing the same assay can obtain differ [sic] results."

One of the main purposes of an assay is to ensure that different laboratories utilizing that same assay will in fact obtain the same results. If different results are obtained, it is likely because one of the laboratories utilizing the assay did not correctly perform the assay in accordance with the assay's accepted procedures.

6. Second, the Examiner also states:

"Additionally, the workup/preparation is as important as the assay utilized."

Although I agree with the Examiner's statement, certain steps and/or conditions of the workup/preparation for an assay are more significant than other steps and/or conditions in order to ensure consistent results from any particular assay. In other words, some steps and/or conditions may have a significant affect on the outcome of the data, but others may not affect the data.

7. Third, I disagree with the Examiner's conclusion that the differences listed on page 4 of the Office Action of July 1, 2009 will affect the data obtained from the assays set forth in the present patent application no.: 10/821,828 and that in DeLuca et al US 5,843,928. More specifically:

(a) the animal diet:

'928 Patent	Present '828 Application
0.47% calcium, 0.3% phosphorus vitamin D-deficient diet for one week and then two weeks of 0.02% calcium, 0.3% phosphorus vitamin D deficient diet	0.47% calcium, 0.3% phosphorus vitamin D deficient diet for one week and then three weeks of a 0.02% calcium, 0.3% phosphorus vitamin D deficient diet

The difference noted by the Examiner, i.e. two weeks of the 0.02% calcium containing diet versus three weeks of the 0.02% calcium containing diet is insignificant to these assays, and will not affect the outcome of the data, because the purpose of feeding the low calcium diet is to ensure any calcium found in the blood of the animal is from bone, not from intestinal calcium absorption. Thus, feeding the low calcium diet for either two weeks or three weeks is sufficient to ensure blood serum calcium is from bone, not the intestine.

(b) the vehicle in which the compound was dissolved:

'928 Patent	Present '828 Application
A 95% propylene glycol/5% ethanol solvent system was utilized	Propylene glycol was utilized alone

The difference noted by the Examiner, i.e. a solvent system utilizing 95% propylene glycol and 5% ethanol versus a solvent system utilizing 100% propylene glocol is insignificant to these assays, and will not affect the outcome of the data, because in order to be intraperitoneally injected the Vitamin D compound must first be dissolved in a solvent. In the '928 patent, the compound was first dissolved in the ethanol which in turn was then mixed with propylene glycol whereas in the present '828 patent application the compound was dissolved directly into the propylene glycol. This difference in procedure will not affect the outcome of the data obtained from these assays.

(c) the duration of drug administration:

'928 Patent	Present '828 Application
Daily for 7 days	4 consecutive doses approximately 24 hours apart

The difference noted by the Examiner, i.e. administering the vitamin D compound for 7 days versus administering the vitamin D compound for 4 days is insignificant to these assays, and will not affect the outcome of the data, because one of the desired results is to determine the affect of the compound being tested without any affect being attributable to other vitamin D compounds that may be present in the animal's system. Accordingly, feeding a vitamin D deficient diet depletes the animal's system of all vitamin D so that upon administration of the test compound, the data obtained is solely the results of the activity of that tested vitamin D compound. Thus, whether the test compound is administered for 7 days or for 4 days will not affect the outcome of the data obtained from these assays.

(d) the handling of the blood obtained from the assay:

'928 Patent	Present '828 Application
Centrifuged to obtain serum	Allowed to coagulate and then centrifuged to obtain serum

The difference noted by the Examiner, i.e. centrifuging blood in liquid form to obtain serum versus centrifuging coagulated blood to obtain serum, does not in my extensive experience affect the measurement of calcium, and would not affect the outcome of the data, because the end product of either step is the same, i.e. blood serum which is used to determine the concentration of calcium therein. Thus, whether serum is obtained while the blood is still in

liquid form or after it coagulates will not affect the outcome of the data obtained from these assays.

Conclusion

8. That the differences between assays noted by the Examiner in the Office Action of July 1, 2009 are all insignificant and none of those differences will affect the outcome of the data obtained by the assays in question.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

12/14/09
Date

Hector F. DeLuca